

REMARKS

Summary of the Office Action

In the Office Action, the drawings and specification stand objected to.

Claim 18 stands rejected under 35 U.S.C. § 112, 1st Paragraph.

Claims 3, 4 and 10-13 stand rejected under 35 U.S.C. § 112, 2nd Paragraph.

Claims 1, 3, 4, 10-14 and 18 have been rejected under 35 U.S.C. § 102 (b), as being anticipated by U.S. Patent Nos. 4,603,448 to *Middleton* for the reasons indicated.

Summary of the Response to the Office Action

Applicant proposes amending claims 1, 3, 10-12 and 13, and adding new claim 19. Accordingly, claims 1, 3, 4, 10-14, 18 and 19 are pending for further consideration.

Objection to the Drawings

In the Office Action, the drawings stand objected to.

Specifically, the Office Action states that the limitation of a drive motor with a connection point provided on the motor, the connection point corresponds to the connection point of a tool working with a high rotation speed must be shown. With regard to the aforementioned objection, Applicant respectfully asserts that the aforementioned limitation is now shown in amended Fig. 3.

The Office Action further states that the limitations of “a reduction gear,” “a drive tool” and “a tool” must be shown. With regard to the aforementioned objection regarding “a reduction gear,” Applicant respectfully asserts that the limitation of reduction gear 34 is shown in original Fig. 3. With regard to the aforementioned objection regarding “a drive tool” and “a tool” Applicant respectfully notes that a drive tool, such as the root canal tool, has been illustrated in Fig. 15.

With regard to new Fig. 15, the Office Action states that Fig. 15 contains new matter. In the interest of expediting prosecution of this application, Applicant respectfully proposes amending Fig. 15 to show a “tool” as it would be connected to the device according to claim 1.

Accordingly, Applicant respectfully requests withdrawal of the objection to the drawings.

Objection to the Specification

In the Office Action, the specification stands objected to as including grammatical or idiomatic errors.

Further to clarifying paragraph [0044] per the response filed November 26, 2003, Applicant respectfully notes that the application as translated from German Priority Document No. 100 61 900.2 has been translated for placement in proper English format, and therefore believes that the application does not require further clarification.

Accordingly, Applicant respectfully requests withdrawal of the objection to the specification.

Rejection under 35 U.S.C. 112, 1st Paragraph

In the Office Action, claim 18 stands rejected under 35 U.S.C. 112, 1st Paragraph.

Specifically, the Office Action states that there is no teaching in the original disclosure for “a connection point provided on a motor,” as recited in independent claim 18.

With regard to the aforementioned rejection, Applicant respectfully directs the Examiner’s attention to, for example, paragraph [019] in the original specification, which states “[o]ther hand pieces can be attached to the motor by means of a connection point, which corresponds to the connection point of a hand piece with high rotation speed.”

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. 112, 1st Paragraph rejection of claim 18.

Rejection under 35 U.S.C. 112, 2nd Paragraph

In the Office Action, claims 3, 4 and 10-13 stand rejected under 35 U.S.C. 112, 2nd Paragraph.

With regard to dependent claim 3, the Office Action requests clarification for the sleeve. With regard to claim 3, Applicant respectfully directs the Examiner’s attention to, for example,

paragraphs [0011] and [034] in the original specification, which state “a magnetically soft element, such as a yoke, a flux guide coil or a magnet, is positioned in the zone of influence of one or more magnetic clutch elements so that the magnetic field of at least one of the magnets of the clutch elements is guided by a magnetically soft element,” and “[t]he sleeve [13] is made of a magnetically good conducting material.” Thus sleeve 13 is an example of a magnetically soft part as recited in claim 3. Applicant further proposes specifying “said means for influencing” in dependent claim 3 to have proper antecedent basis to “said means for influencing” in independent claim 1.

With regard to the objection to the language of claim 11, Applicant proposes amending claim 11 as shown above.

With regard to the objection to the language of claim 12, Applicant proposes amending claim 12 as shown above.

With regard to the objection to the language of claim 13, Applicant proposes amending claim 13 as shown above.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. 112, 2nd Paragraph rejection of claims 3, 4 and 10-13.

All Claims are Allowable

In the Office Action, claims 1, 3, 4, 10-14 and 18 have been rejected under 35 U.S.C. § 102 (b), as being anticipated by U.S. Patent Nos. 4,603,448 to *Middleton* for the reasons indicated. Applicant traverses this rejection for the following reasons.

Independent claim 1

With regard to independent claim 1, Applicant respectfully asserts that *Middleton* does not teach or suggest a dental instrument having a transmission device with at least one magnetic and/or magnetizable clutch element, the clutch element having an air gap, the instrument including, “a means for influencing the transmission torque of the magnetic and/or magnetizable

clutch element by modifying the magnetic flux of the clutch element,” as recited in independent claim 1, as amended.

Support for these features recited in claim 1 can be found at least in Paragraphs 26-51 of the originally filed specification, and in Fig. 1a of the originally filed drawings. Specifically, as shown in Fig. 1a, the present invention provides a dental instrument having a transmission device with at least one magnetic and/or magnetizable clutch element 7, 11 including an air gap 12. The dental instrument includes a means for influencing the transmission torque of the magnetic and/or magnetizable clutch element 7, 11 by modifying the magnetic flux of the clutch elements. As recited in dependent claim 3 and new dependent claim 19, in the embodiment of Fig. 1a, the means for influencing is a magnetically soft sleeve 13, movement of which enables modification of the flux guide between clutch elements 7, 11. Since reduction of the magnetic field is highest in the position of sleeve 13 in relation to clutch elements 7, 11, when sleeve 13 is moved along shanks 2, 8 of the dental instrument, the reduction of the magnetic field between clutch elements 7, 11 and sleeve 13 is weakened, and the transmitted torque between clutch elements 7, 11 is amplified.

The Office Action cites *Middleton* as teaching or suggesting the dental instrument as recited in claims 1, 3, 4, 10-14 and 18.

Middleton, as illustrated in Fig. 3 thereof, discloses a dental instrument 10 including a magnetic clutch plate 36 arranged between two freely turning gears 44, 46 of ferromagnetic material, (Col. 5:42 to Col. 7:3). Clutch plate 36 slides longitudinally on power shaft 26 within a limited range between gears 44, 46, and is actuated by mode selector switch 42 to be disposed in selective contact with one of the gears 44, 46, (Col. 5:42 to Col. 6:3). Once disposed in contact with one of the gears 44, 46, clutch plate 36 becomes magnetically engaged with the selected gear to turn the gear as needed, (Col. 5:42 to Col. 6:3). Thus in essence, *Middleton* discloses a dental instrument including a transmission system in which the air gap between a magnetic clutch plate 36 and respective freely turning gears 44, 46 is modified by means of mode selector switch 42.

Contrary to the transmission device recited in independent claim 1 of the present invention, *Middleton* clearly does not teach or suggest, a transmission device with at least one magnetic and/or magnetizable clutch element, the instrument including, “a means for influencing the transmission torque of the magnetic and/or magnetizable clutch element by modifying the magnetic flux of the clutch element,” as recited in independent claim 1, as amended, or “said means for influencing being a magnetically soft part,” as recited in new dependent claim 19.

Specifically, for the transmission device of *Middleton* for which the air gap between a magnetic clutch plate 36 and respective freely turning gears 44, 46 is modified, such an air gap has no influence whatsoever on the magnetic flux of clutch plate 36. Changes in the air gap disclosed for the transmission device of *Middleton* only effect the constant flux. On the contrary, by providing a magnetically soft part (or likewise an electromagnet with variable current), such as sleeve 13, over clutch elements 7, 11, for the present invention, movement of the magnetically soft part enables modification of the magnetic flux. Applicant respectfully asserts that contrary to the assertion in the Office Action, the mode selector switch 42 of *Middleton* is by no means a magnetically soft part which influences the magnetic clutch plate 36 by modifying its magnetic flux.

Applicant further respectfully notes that as discussed in Col. 5:64 to Col. 6:3 of *Middleton*, a primary purpose of magnetic clutch plate 36 of *Middleton* is to become magnetically engaged with one of the selected gears 44, 46 to turn the gear as needed. However, if the torque necessary to turn the gear exceeds a predetermined amount, clutch plate 36 slips relative to the selected gear to avoid damage to the transmission device, and more importantly, to the tool or a patient's teeth that are being operated on. It is precisely these factors the present invention targets by providing a dental instrument having a transmission device including a magnetically soft part which enables modification of the magnetic flux of the clutch elements. Applicant respectfully asserts that by modifying the magnetic flux of the clutch elements, as opposed to merely modifying the air gap between the clutch plate and the selected gear as disclosed by *Middleton*, the present invention enables a dentist to operate a dental tool according to the present invention in a high speed manner for minimizing treatment time, while providing a

means for precisely avoiding the transmission system from reaching a high torque which could damage a tool or a patient's teeth, and while also providing a means for selectively influencing the magnetic flux for allowing a variety of tools to be used with the dental instrument according to the present invention.

Based upon the aforementioned distinctions, Applicant respectfully asserts that *Middleton* clearly does not teach or suggest a dental instrument having a transmission device with at least one magnetic and/or magnetizable clutch element, the clutch element having an air gap, the instrument including, "a means for influencing the transmission torque of the magnetic and/or magnetizable clutch element by modifying the magnetic flux of the clutch element," as recited in independent claim 1, as amended, or "said means for influencing being a magnetically soft part," as recited in new dependent claim 19.

As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Moreover, as pointed out in M.P.E.P. § 2143.03, "[t]o establish prima facie obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art". *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). Therefore, Applicant respectfully asserts that the rejection under 35 U.S.C. § 102 (b) should be withdrawn because *Middleton* does not teach or suggest each feature of independent claim 1, as amended.

In view of the above arguments, Applicant respectfully requests the rejection of independent claim 1 under 35 U.S.C. § 102 be withdrawn. Additionally, claims 3, 4, 10-14, 18 and 19, which depend from independent claim 1, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.

Allowance of Dependent claims 2, 5-9 and 15-17

Applicant respectfully asserts that under the provisions of MPEP 806.04(d), claim 1 is generic in that it reads on each of the embodiments of Figs. 1-14 and includes no material

element additional to those recited in the species claims. Accordingly, under the provisions of MPEP 806.04(d), with regard to the remaining species (i.e. Figs. 2, 7, 8a-e, 9a, b, 10a, b, and 11-13), Applicant respectfully requests allowance of the remaining non-elected claims 2, 5-9 and 15-17, upon allowance of generic independent claim 1.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 04-2223. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

DYKEMA GOSSETT PLLC

Dated: October 7, 2004

By:



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AMENDMENTS TO THE DRAWINGS:

The attached drawing sheets include changes to Figs. 3 and 15, wherein the connection point corresponding to the connection point of a tool working with a high rotation speed is shown in Fig. 3, and a drive tool, such as the root canal tool, has been illustrated in Fig. 15.

Attachment: Replacement Sheets

Annotated Sheets Showing Changes

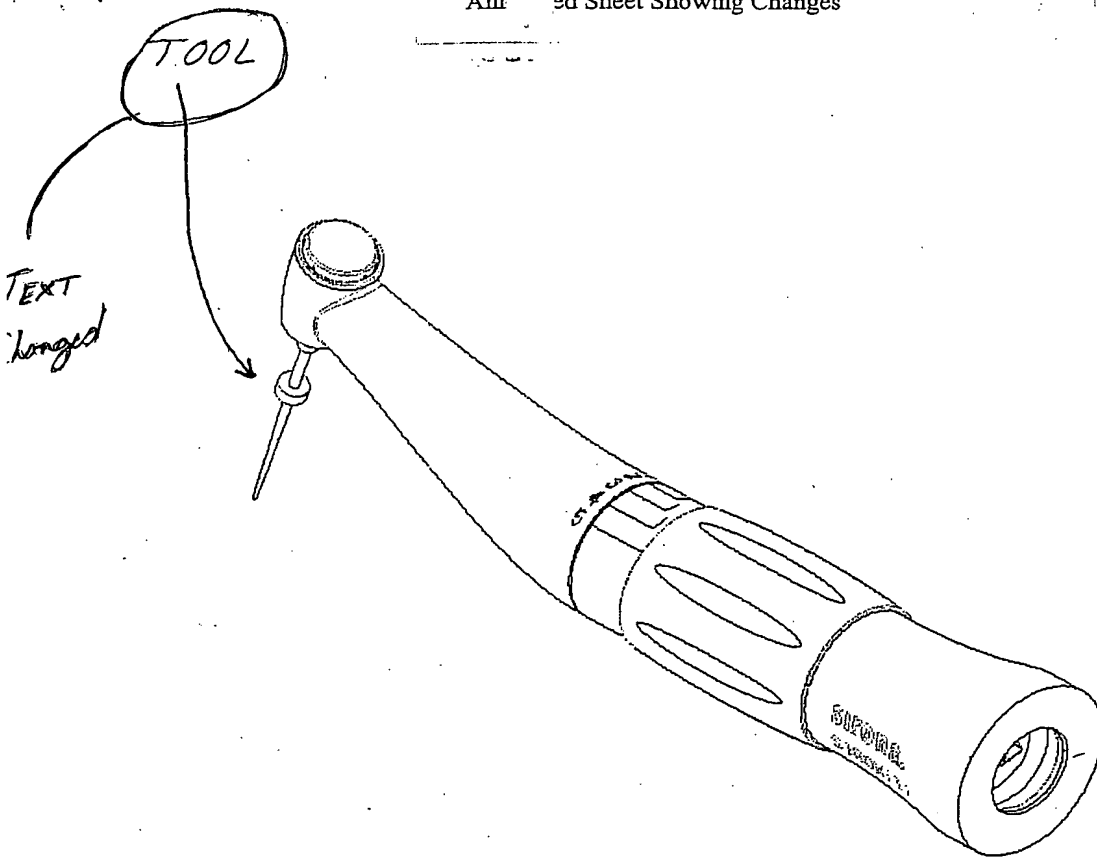


fig. 15

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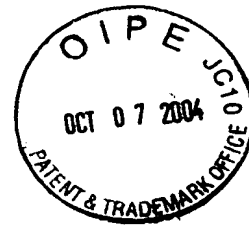
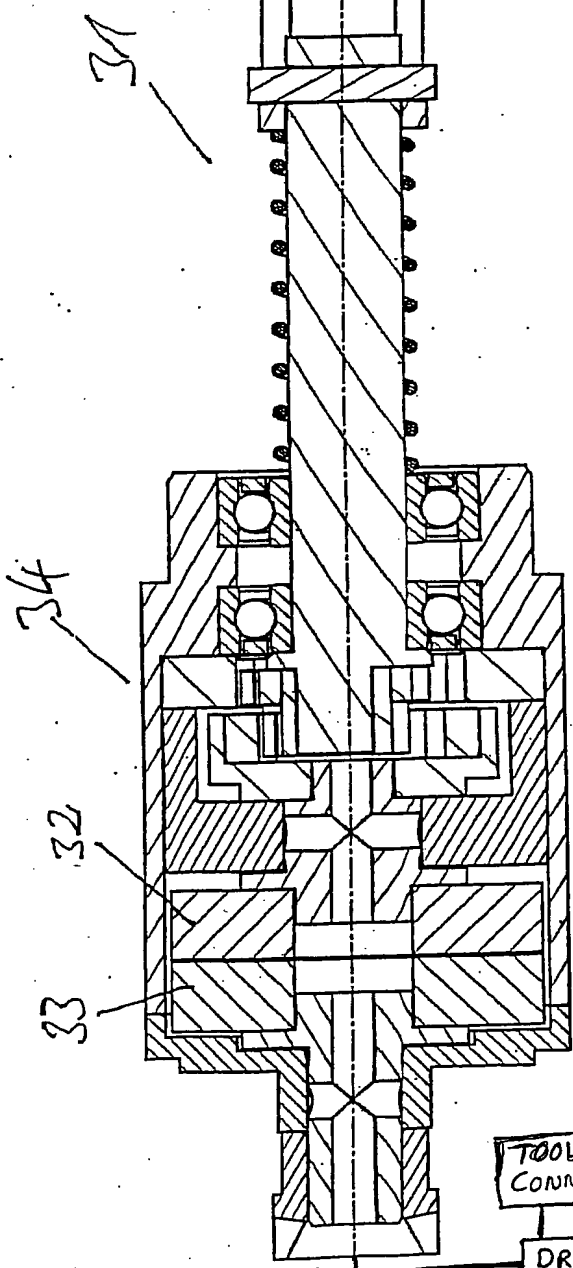


Fig. 3



2.1

2.5

2.2

2.3

TEXT
ADDED

TOOL
CONNECTION
POINT

DRIVE MOTOR

FIG. Label Added.

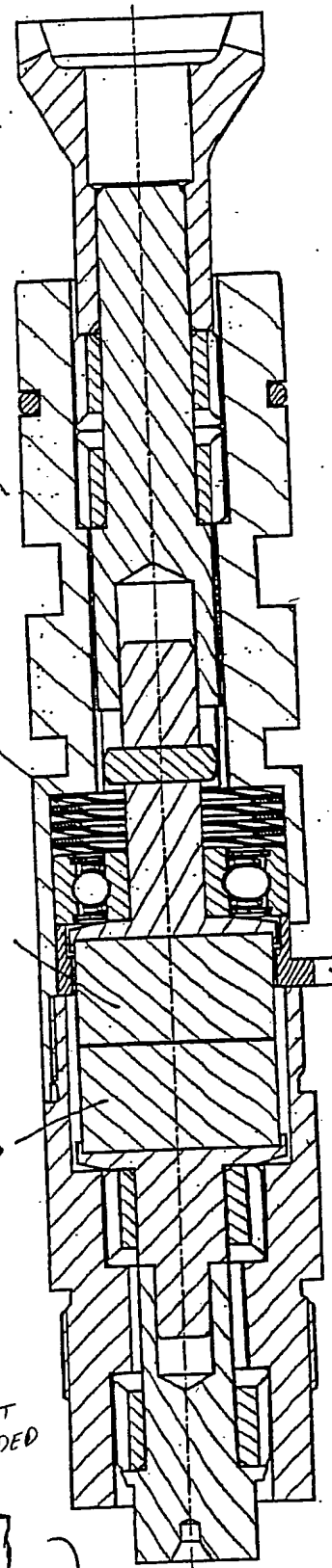


Fig. 2